Furthering Cancer Education in Nova Scotia:

Pharmacists Needs Assessment

Final Report

November 2002

Cancer Care Nova Scotia

Cancer Care Nova Scotia

Foreword

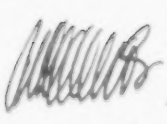
One of the principal elements of the mandate given to *Cancer Care Nova Scotia* is the responsibility to "ensure that health facilities and health professionals remain current with emerging knowledge, guidelines and policies for the prevention and treatment of cancer." This is indeed mission critical to ensure that we have a quality cancer system in Nova Scotia.

The presence of a highly competent, informed and knowledgeable cadre of health professionals competent in the management of cancer patients and their disease as well as in cancer prevention, early detection, and palliative care, is at the core of a quality cancer system for Nova Scotia.

To determine the skills and competencies needed by health professionals, *Cancer Care Nova Scotia* undertook a series of three needs assessments and thirteen focus groups that resulted in the most comprehensive assessment of oncology education undertaken in Canada, and likely in all of North America. It was important to conduct this magnitude of assessment as there was no baseline understanding of what nurses, physicians, pharmacists and other health professionals already knew about cancer management. Additionally, the assessment looked at professionals' preferred modes of learning and maintaining currency in the field. To ensure the correct evidence-base for developing cancer education programming, *Cancer Care Nova Scotia* surveyed provincially 2403 nurses, 561 physicians and 839 pharmacists. The focus groups, conducted in all health districts across the province, took an in-depth look at the needs of physicians, nurses, and pharmacists as well as other health professionals. The resulting information is contained in three separate reports generated by discipline (physicians, nurses and pharmacists) and will be published in November 2002. The report from the focus groups will be available in December 2002. Together, they are the most powerful understanding of the needs of health professionals in cancer care that exists at this time.

This information will be the backbone for developing education programs that will be both multi-disciplinary and discipline-specific. They will become the core of an approved program for community cancer care. Better yet, they will ensure that Nova Scotia has the ability, through its committed health professionals to provide the best possible, evidence-based care for cancer patients.

Through education programming, based on the evidence from the needs assessments, we will ensure that health professionals have the skills and competencies they require to care for cancer patients now and into the future.



Andrew Padmos, BA, MD, FRCPC
Commissioner, *Cancer Care Nova Scotia*

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Deb Barnhill
Larry Broadfield
John McNeil
Anne Murray
Bill Skinner
Jill Skinner
Sharon Sobol
Lilla Tanner

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This report was prepared by Paul Chaulk, MSc, of the Atlantic Evaluation Group Inc. with the assistance of Anne Murray, BSc, MAEd, Education Coordinator, *CCNS* and Larry Broadfield, BSc, MHSc, FCSHP, Manager, Systemic Therapy Program, *CCNS*.

For additional information on this survey, please contact:

Anne Murray
Education Coordinator
Cancer Care Nova Scotia
1278 Tower Road, Bethune 541
Halifax, Nova Scotia, B3H 2Y9
Phone: 902 473-3781
Fax: 902 473-4631
E-mail: anne.murray@ccns.nshealth.ca

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Executive Summary

This needs assessment was undertaken by *CCNS* to assist in meeting its mandate to facilitate cancer care education for pharmacists. The purpose of this needs assessment was to obtain the best information possible to assist in planning education programs for pharmacists working with individuals and families living with and at risk for cancer. The questionnaire was designed with the assistance of the Pharmacists Advisory Group of *CCNS* (see Appendix A) and was based in part, on the *CCNS* physicians and nurses needs assessment questionnaires, as well as draft Pharmacist Standards of Care. All pharmacists from the list provided by the Nova Scotia Pharmaceutical Society were mailed questionnaires in April 2002 followed by a reminder postcard and a later reminder letter.

The overall response rate was 45%, ranging from 25% to 57% per district after wrong addresses were excluded. The response rate from Capital Health and from all other districts were nearly identical. The responses included 301 completed surveys (36% of the sample) and 69 pharmacists who returned the voucher indicating they did not provide care for cancer patients or their families (8% of the sample). In total, 51 of the 126 hospital pharmacists listed on the database completed the survey (40%) and 239 of 713 community pharmacists completed the survey (34%). Responses were representative of varying community sizes. Thirty-six percent worked in a community greater than 50,000 residents in size; 9% in a community between 25,000 and 50,000 in size; 34% in a community between 5,000 and 25,000 in size; and 21% in a community smaller than 5,000 in size.

Pharmacists were asked about important general topics for Continuing Pharmacy Education (CPE). The top issues for which continuing education are needed included: pain management; symptom management; chemotherapy; supportive and palliative care; and pharmaceutical care. Hormone therapy was also rated as a very important need for community pharmacists. With the exception of hormone therapy, these top issues were consistent among pharmacists in hospital and community settings, in varying districts and in varying community sizes.

There was no one educational method and setting that would be preferred or accessible to most pharmacists. The preferred methods of receiving continuing education were consistent between hospital and community pharmacists and included Dalhousie CPE programs, meetings / conferences, person to person, and formal courses. There were some differences between

hospital and community pharmacists in lower rated methods. Hospital pharmacists were more likely to prefer interactive practice based workshops, interactive video conference CPE programs, and teleconferences than community pharmacists. The preferred locations for hospital pharmacists included their place of employment, a regional or community hospital or a tertiary care hospital. The preferred locations for community pharmacists included their home; place of employment or a university setting.

Pharmacists were also asked about the preferred times and seasons to attend continuing education, as well as their willingness to travel to receive continuing education. Almost all pharmacists were able to attend continuing education during personal time. Most hospital pharmacists were also able to attend continuing education during work time. This was not true for most community pharmacists. The best time of the week for most pharmacists was weekdays during the evening. Other times were much less preferred although many hospital pharmacists also preferred weekdays during the day. The best seasons to attend continuing education were Fall, Spring and Winter, in that order. Most pharmacists were only willing to travel more than 50 km about once or twice a year.

The highest rated supports included: having a list of health professionals and agencies to contact about specific issues; a help line to an oncology pharmacist to consult about specific cancer related problems; a checklist and/or instructions for managing patients and continuing care when a patient returns to their practice; attending educational sessions and current pharmacy and medical texts/journals. Many hospital pharmacists also rated workplace support (i.e. management promoting continuing education for staff) and Clinical Practice Guidelines as "very important" supports.

Hospital and community pharmacists rated many factors as barriers to improving the care of cancer patients in their practice. The highest rated barriers for hospital pharmacists were lack of staff; lack of time; and costs of prescription medications. The highest rated barriers for community pharmacists were lack of Continuing Pharmacy Education programs in cancer care; costs of prescription medications; and lack of communication with the specialist physician about patients.

There were large gaps between present and needed levels of knowledge and skill to perform effectively as a pharmacist. There was a statistically significant difference between present and needed levels of knowledge and skill to perform effectively as a pharmacist in almost all of the 23 areas listed on the survey related to the standards of care. There were a number of differences between hospital and community pharmacists.

Pharmacists were also asked about the standards of care outlined in the "Specialty Practice Standards for Oncology" draft document by the Canadian Association of Pharmacist in Oncology - CAPhO. Less than 70% of hospital pharmacists rated themselves as having adequate knowledge to achieve three of the six CAPhO standards and less than 70% of community pharmacists had sufficient training and knowledge to achieve any of the six standards.

Many factors contribute to the decision to participate in continuing education although time, scheduled program times, work demands and program relevance appear to be the most important ones. Other important factors included location of educational opportunity, personal interest, approval for Continuing Education Units, and family demands.

As noted above, there were many differences between community and hospital pharmacists in various areas assessed on the questionnaire. There were also some differences by districts and by community size in terms of educational resources, methods and settings. However, there were very few differences in terms of educational needs and priorities, needed supports or knowledge and skills related to standards of care.

The discussion of survey results and a planning session with the Pharmacists Advisory Group (see Appendix A) of *CCNS* led to the development of recommendations for the design and implementation of cancer education for pharmacists. It should be noted that these recommendations are part of a larger effort by the Education Advisory Group of *CCNS* and their implementation depends upon factors such as availability of finances and human resources, as well as various other constraints. The recommendations are as follows:

1. *CCNS* lead the development of a series of continuing educational modules on the following topics: pain management, symptom management, chemotherapy,

supportive and palliative care, and pharmaceutical care; building on what's already available in those areas. Hormone therapy was also rated as a very important need for community pharmacists.

2. *CCNS* organize and support the delivery of cancer educational modules through a variety of methods in a variety of settings.

3. *CCNS* ensure that educational opportunities are made accessible to both hospital and community pharmacists in all districts.

4. A directory of available educational resources and opportunities and a directory of health professionals and agencies who could be called around specific issues would be a useful and credible undertaking for *CCNS*.

5. *CCNS* make the final report available to all persons involved in curriculum development so that full use can be made of the detailed responses regarding knowledge and skills related to each standard of care.

6. *CCNS* ensure that the CE modules are practical and relevant. Some modules might be case-study based while others might be delivered in a more traditional format.

7. *CCNS* work with various stakeholders, such as the Dalhousie University - Division of Continuing Pharmacy Education, The Pharmacy Association of Nova Scotia and The Nova Scotia College of Pharmacists to provide advance scheduling of cancer-related CPE events. It is important to work with these stakeholders to avoid scheduling conflicts with other continuing education events and to coordinate the delivery of a consistent set of educational modules.

8. *CCNS* establish a Pharmacist Education Sub-Committee with representation from across the province, under the *CCNS* Education Advisory Group, to review these results and to make recommendations for implementation.

9. *CCNS* support evaluation of new cancer education modules and delivery methods.

1. Introduction

Cancer Care Nova Scotia is a program of the provincial Department of Health that started in 1998. Its mission is to "help achieve excellence in cancer prevention, treatment, care and research for all Nova Scotians." Its vision is to reduce the effects of cancer on individuals and families through research, prevention and screening, and to lessen the fear of cancer through education and information. "Nova Scotians diagnosed with cancer, together with family, friends, and community, will find all aspects of cancer care excellent in quality, professional in focus, compassionate in delivery, and caring in spirit." This needs assessment will help *CCNS* in meeting its mandate to facilitate cancer care education for pharmacists.

The purpose of this needs assessment was to obtain the best information possible to assist in planning educational programs for pharmacists working with individuals and families living with and at risk for cancer. The objectives of this needs assessment were to:

- Examine the current knowledge and skills of pharmacists working with cancer patients and their families.
- Determine the varying levels of knowledge and skills required to work at various levels with cancer patients.
- Prioritize cancer continuing education needs.
- Determine the most appropriate method to meet educational needs.

2. What You Need To Know About This Survey

The questionnaire was designed with the assistance of the Pharmacists Advisory Group (see Appendix A). The group met in the Fall of 2001 during the Cape Breton Cancer Symposium to respond to an initial draft, based in part, on the *CCNS* physician and nurses needs assessment surveys, as well as draft Pharmacist Standards of Care. [1] Later drafts of the survey underwent further revisions based on additional feedback from the Pharmacists Advisory Group (see Appendix A). The survey was designed in three sections: Section A: Continuing Education Needs and Resources; Section B: Standards of Care; and Section C: Demographic Information.

The survey was pilot tested via telephone or in-person interview with a convenience sample of seven pharmacists practicing in Nova Scotia. It should be noted that all results are self-reported by respondents.

A complete sampling procedure was employed whereby all pharmacists from the list provided by the Nova Scotia Pharmaceutical Society were sampled. Questionnaires were mailed on April 26, 2002 with a stamped, self-addressed return envelope. The package also included a voucher to be entered for one of three prizes of gift certificates. Pharmacists who did not provide care for cancer patients or their families were asked not to complete the questionnaire, but to check the appropriate box on the voucher and return it in the self-addressed envelope. The voucher also included a check box for pharmacists to indicate if they wanted to receive a copy of the report. A reminder postcard was mailed on May 10, 2002, and a reminder letter was mailed May 31, 2002.

Data was analyzed using descriptive statistics (proportions, means) and inferential statistics (chi-squared, F-tests, paired t-tests) at an alpha level of 0.01. This means that the probability of each statistically significant result occurring due to chance alone is less than 1%. [2] Items that were responded to on a 1 to 5 scale were converted to a 0 to 100 scale for ease of interpretation (by subtracting one and multiplying by 25). Finally, open-ended (qualitative) data was organized into themes and ranked according to frequency of responses.

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[1] *Standards of care outlined in the "Specialty Practice Standards for Oncology" draft document by Canadian Association of Pharmacist in Oncology - CAPhO.*

[2] *This is stricter than the commonly used level of 5% due to the larger number of statistical tests being conducted. An exact adjustment for the number of tests being conducted was not done as it would unduly restrict statistical power.*

3. Findings

3.1 Description of Survey Respondents

The overall response rate was 45%, ranging from 25% to 57% per district after wrong addresses were excluded. The responses included 301 completed surveys (36% of the sample) and 69 pharmacists who returned the voucher indicating they did not provide care for cancer patients or their families (8% of the sample). In total, 51 of the 126 hospital pharmacists listed on the database completed the survey (40%) and 239 of 713 community pharmacists completed the survey (34%). *[It should be noted that for many survey questions, pharmacists were able to check multiple responses and/or not all pharmacists responded to the question. Therefore, in many cases, the numbers do not add up to the total of 301 respondents.]*

Demographic information was collected on employment setting. Fifty-one respondents (17%) spent the most work hours in a hospital pharmacy setting; 239 respondents (81%) spent the most work hours in a community pharmacy setting; and seven respondents (2%) spent the most work hours in an academic, administrative or other setting. There was a greater proportion of hospital pharmacists in communities greater than 50,000 residents in size (26%) compared to communities 5,000 to 50,000 in size (15%) or communities less than 5,000 in size (5%). The reverse was true for community pharmacists. If all jobs were considered, the proportion that worked in a hospital pharmacy setting rose to 19% and the proportion that worked in a community pharmacy setting rose to 86%.

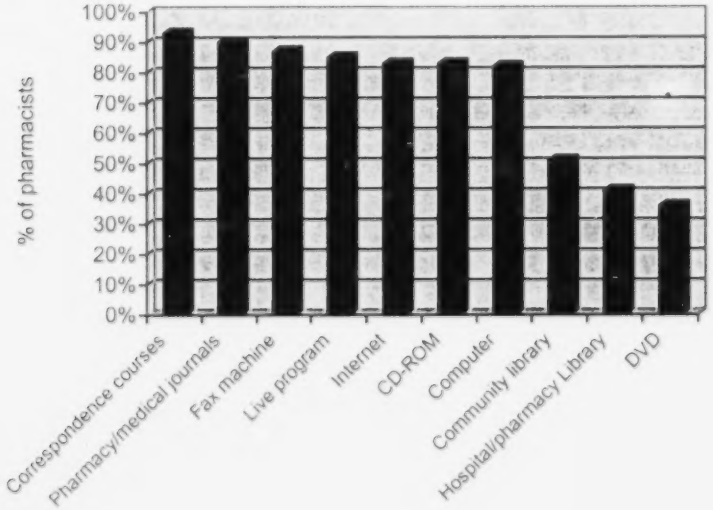
Demographic information was also collected on employment status; the level of practice; involvement in research and education; and size of community. Eighty-five percent worked full time; 13% worked part time and less than 1% worked in a casual status. Examining level of practice, 90% worked in primary care, 5% worked in secondary care and 5% worked in tertiary care. A majority of respondents were involved in teaching pharmacy students (84%), employees (61%) and pharmacy technical students (56%). Few respondents were involved in clinical trials research (7%) or pharmacy-based research (6%). Finally, respondents worked in a variety of community sizes. Thirty-six percent worked in a community greater than 50,000 residents in size; 9% in a community between 25,000 and 50,000 in size; 34% in a community between 5,000 and 25,000 in size; and 21% in a community smaller than 5,000 in size.

Note: Any statistically significant differences between hospital and community pharmacists (as defined by the job where they worked the most hours) is noted in the remainder of Section 3.

3.2 Continuing Education Resources and Preferences

Pharmacists were asked about resources accessible to them for continuing education (Figure 1). More than 80% of pharmacists perceived correspondence courses; pharmacy/medical journals; fax machine;live program; Internet; a CD-Rom and a computer as being accessible for their continuing education. However, only 51% perceived a community library as accessible; only 41% perceived a hospital/pharmacy library as accessible; and only 36% perceived a DVD as accessible for continuing education. There were some differences between hospital and community pharmacists in perceived accessibility. Hospital pharmacists were more likely to perceive a computer (96%), the Internet (96%) and a hospital or pharmacy library (84%) as being accessible for continuing education compared to community pharmacists (79%, 80% and 30%, respectively). There were also differences by community size and between Capital Health and the other districts. A hospital or pharmacy library was less likely to be seen as accessible in smaller communities (less than 50,000 in size). A community library was less likely to be seen as accessible in smaller communities (less than 50,000 in size) and outside Capital Health.

Figure 1: Perceived availability of continuing education resources.



With regards to computer accessibility, 38% had access to a computer at work for continuing education purposes (80% of hospital pharmacists and 28% of community pharmacists). Overall, 86% had access to a computer at home. Forty-eight percent of pharmacists considered themselves computer literate, 44% consider themselves somewhat computer literate and only 9% did not consider themselves computer literate. Finally, 63% were familiar with using the Internet; 32% were somewhat familiar with using the Internet and 5% were not familiar with using the Internet.

A number of supports were rated as "very important" in receiving new knowledge and skills in cancer care by a majority of pharmacists (Table 1). The highest rated supports (> 70% very important) were having a list of health professionals and agencies to contact about specific issues; a help line to an oncology pharmacist to consult about specific cancer related problems; a checklist and/or instructions for managing patients and continuing care when a patient returns to their practice; attending education sessions; and current pharmacy and medical texts/journals. Greater than 70% of hospital pharmacists also rated Workplace Support (i.e. management promoting continuing education for staff) and Clinical Practice Guidelines as "very important" supports. There were differences in the rating of some of the lower rated supports by hospital and community pharmacists. Some of the relatively lower rated supports were rated as "very important" by a higher proportion of hospital pharmacists compared to community pharmacists. There were also some differences by community size but not between Capital Health and other districts. Research projects, evidence based practice, clinical practice guidelines were more often rated as "very important" by pharmacists in communities greater than 50,000 in size.

Table 1. Importance of supports in receiving new skills and knowledge in cancer care.

Support	% who rated it "very important"		
	Hospital pharmacists	Community pharmacists	All pharmacists
Having a list of health professionals and agencies I could contact about specific issues	73%	79%	77%
Help line to an oncology pharmacist to consult about specific cancer related problems	63%	76%	74%
Checklist and/or instructions for managing patients and continuing care when a patient returns to my practice	59%	75%	72%
Attending educational sessions	80%	69%	71%
Current pharmacy and medical texts/journals	73%	66%	67%
Workplace support, i.e. management promoting continuing education for staff *	77%	56%	59%
Clinical Practice Guidelines *	77%	51%	56%
Evidence-based cancer care web sites	53%	43%	46%
Through self-directed learning	28%	37%	36%
Assistance with implementing evidence-based practice, i.e. incorporating the latest research evidence in your practice *	61%	21%	29%
Working with/shadowing a pharmacist who is a specialist in cancer care *	43%	19%	24%
Participating in distance education, e.g. Telehealth	34%	18%	20%
Your certification by the Canadian Association of Pharmacist in Oncology (CAPhO)- [when available] #	18%	20%	20%
Participation in and attendance at professional pharmacy association meetings, conferences, such as the Canadian Society of Hospital Pharmacists Professional Practice Conference or the CAPhO National Oncology Pharmacy Symposium *	53%	11%	19%
Journal clubs *	24%	6%	9%
Participation in research projects * ##	20%	3%	6%

** Statistically significant difference between hospital and community pharmacists, p<0.01 (very important vs, somewhat/not at all important).*

 # Rated "not applicable" by 14% of all pharmacists.
Rated "not applicable" by 10% of all pharmacists.
No other support was rated as "not applicable" by more than 10% of all pharmacists.

Note: Pharmacists working in academic, administrative and other settings are included in the totals only for the above table.

The preferred locations to receive continuing education were quite different between hospital and community pharmacists (Table 2). The preferred locations to receive continuing education for hospital pharmacists were their place of employment (86%), a regional or community hospital (45%) or a tertiary care hospital (37%). The preferred locations for community pharmacists were their home (65%) or place of employment (43%). There was one difference by district: regional or community hospitals were less preferred as a setting to receive continuing education in Capital Health compared to the other districts.

Table 2. Preferred locations / settings to receive continuing education.

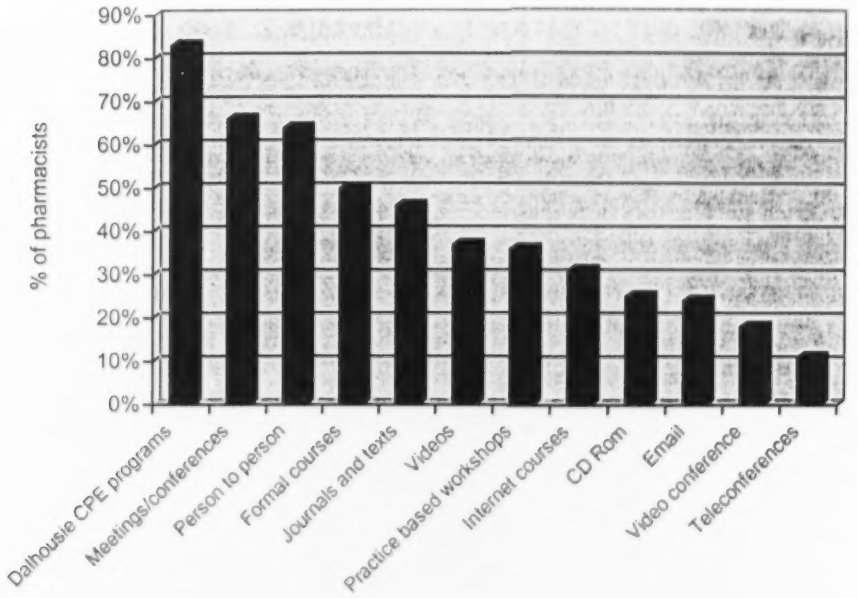
Setting	% choosing setting		
	Hospital pharmacists	Community pharmacists	All pharmacists
Home *	18%	65%	56%
Place of employment *	86%	43%	50%
Regional or community hospital *	45%	23%	27%
University	26%	27%	27%
Tertiary care hospital *	37%	11%	16%
Nova Scotia Community College	9%	11%	11%

** Statistically significant difference between hospital and community pharmacists, $p<0.01$.*

Note: Pharmacists working in academic, administrative and other settings are included in the totals only for the above table.

The preferred methods for receiving continuing education were the Dalhousie Continuing Pharmacist Education (CPE) program (83%); meetings/conferences (66%); person to person (64%); formal courses (50%); and journals and texts (46%) (Figure 2). The least preferred were teleconferences (11%) and interactive video conference CPE programs (18%). There were some differences between hospital and community pharmacists. Hospital pharmacists were more likely to prefer interactive practice based workshops (65% versus 28% of community pharmacists); interactive video conference CPE programs (31% versus 14% of community pharmacists); and teleconferences (34% versus 5% of community pharmacists). There was one difference by community size: teleconferences were less preferred as a method to receive continuing education in smaller communities (less than 50,000 in size).

Figure 2: Preferred methods for receiving continuing education.

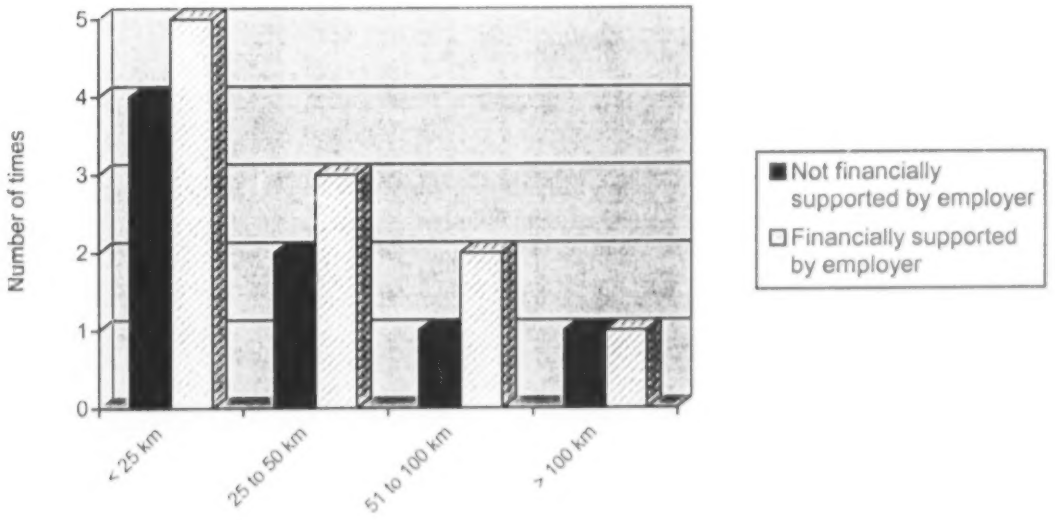


Pharmacists were also asked about the preferred times and seasons to attend continuing education, as well as their willingness to travel to receive continuing education. Almost all pharmacists (96%) were able to attend continuing education during personal time. Most hospital pharmacists (88%) were also able to attend continuing education during work time. This was not true for community pharmacists; only 27% were able to attend during work time. The best time of the week was weekdays during the evening (84%); followed by weekends during the day (42%); weekdays during the day (34%); and weekends during the evening (19%). The only difference between hospital and community pharmacists was with regards to preference for weekdays during the day, which was preferred by 53% of hospital pharmacists but only 29% of community pharmacists.

The best seasons to attend continuing education were Fall (79%), Spring (74%) and Winter (68%), whereas very few (14%) would attend continuing education during the Summer. Preference for attending continuing education in Winter was progressively lower in smaller communities. Eighty-one percent in communities greater than 50,000 in size preferred Winter compared to 64% of those in communities 5,000 to 50,000 in size and 54% of those in communities less than 5,000 in size.

Pharmacists were willing to travel more often if the travel was financially supported by their employer (Figure 3). If financially supported by their employer, the median number of times they were willing to travel < 25 km was 5 times per year; to travel 25 to 50 km was 3 times; to travel 51 to 100 km was 2 times; and > 100 km was one time per year. There were consistent differences in willingness to travel by district. Regardless of whether it was financially supported by the employer, pharmacists in Capital Health were willing to travel any distance greater than 25 km less often than pharmacists in other districts.

Figure 3: Willingness to travel to attend continuing education.



Pharmacists were asked about various factors that might impact their decision to participate in continuing pharmacy education (Table 3). Many factors were rated as having a "major impact" by the majority of pharmacists. The highest rated decision factors were available time (96%); scheduled program times (88%); work demands (84%); program relevance (83%); location of educational opportunity (69%); personal interest (67%); approval for Continuing Education Units (63%); and family demands (58%). Other decision factors were rated as having a "major impact" by only a minority of pharmacists, as shown in the table. Except for finances and approval for Continuing Education Units, the decision factors were rated the same by hospital and community pharmacists. There was one difference by community size: a lower proportion of pharmacists in communities 5,000 in size or smaller rated support from employer as having a "major impact " compared to larger communities.

Table 3. Impact of factors affecting decision to participate in continuing education.

Decision Factor	% who rated it as having a "major impact"		
	Hospital pharmacists	Community pharmacists	All pharmacists
Available time	100%	95%	96%
Scheduled program times	80%	90%	88%
Work demands	90%	82%	84%
Program relevance	76%	84%	83%
Location of educational opportunity	76%	67%	69%
Personal interest	67%	67%	67%
Approved for Continuing Education Units *	50%	66%	63%
Family demands	56%	58%	58%
Program length	42%	50%	49%
Type of program (e.g. lecture, computer-based)	42%	47%	47%
Support from employer (e.g. Education leave, tuition reimbursement)	51%	32%	35%
Maintenance of certification	27%	30%	29%
Finances *	35%	18%	21%
Availability of certification (in oncology pharmacy)	18%	16%	16%

** Statistically significant difference between hospital and community pharmacists, p<0.01 (major impact vs. minor or no impact)*

Note: Pharmacists working in academic, administrative and other settings are included in the totals only for the above table.

Finally, pharmacists were asked in an open-ended question about how *Cancer Care Nova Scotia* can assist them in attaining their continuing education needs. They made numerous suggestions, the most frequent of which are shown in Table 4.

Table 4. How *Cancer Care Nova Scotia* can assist in attaining their continuing education needs.

How *CCNS* can assist	# of pharmacists
Live/in-person CPE	33
Provide info on specific CPE topics	22
Printed educational materials such as info sheets, pamphlets, etc.	17
Workshops/seminars/conferences	16
Work with pharmacy organizations such as College of Pharmacists, Dept. of Continuing Pharmacy Education, local pharmacy coordinators	14
Distance education/correspondence education	13
Info on Internet/CD Rom	12
Provide updates on current protocols, trends, etc	12
Various suggestions as to length and timing of CPE sessions	12
Increase accessibility of educational opportunities (e.g., in isolated areas)	10
Newsletters/mailouts	9
Very little CPE now/any would be helpful	9
Need programs specifically for the community pharmacist	8
Self-directed learning modules/home study	7
Make contact list of resource people/oncology consultants available	7
Provide recognition for CPE efforts/education	7
Organize/set up CPE programs	7

3.3 Continuing Education Needs

Hospital and community pharmacists were asked about their present and needed level of understanding, skill and experience to provide counseling in various areas. Community and hospital pharmacists rated their present or needed level differently on six of the thirteen areas and are thus presented in different tables (Tables 5a and 5b). The mean present level was rated highest for smoking cessation, skin cancer prevention and increasing physical activity for both hospital and community pharmacists. With the exception of smoking cessation, breast self examination, increasing physical activity and skin cancer prevention, all present level ratings were significantly lower than the needed ratings for hospital pharmacists. With the exception of smoking cessation, all present level ratings were significantly lower than the needed ratings for community pharmacists. The difference between these ratings, an indication of the gap between present and needed knowledge levels, is also shown in the tables. The largest knowledge gaps

for both hospital and community pharmacists were in dealing with patient/family anger; dealing with patient/family grief; colorectal cancer screening; and PSA test awareness (prostate cancer). There was also a large gap in dealing with your own grief and stress among hospital pharmacists. There were no differences by community size or between Capital Health and other districts.

Table 5a. Present and needed level of understanding, skill and experience to provide counseling among hospital pharmacists.

Area	Mean level (on a scale of 0 to 100)		Difference
	Present level	Needed level	
Dealing with patient/family anger *	30	71	41
Dealing with patient/family grief *	33	74	41
Dealing with your own grief/stress *	41	76	35
Colorectal cancer screening *	36	70	34
PSA test awareness (prostate cancer) *	41	71	30
Interpreting information the patient received from other health professionals such as the physician *	58	80	22
Alcohol or drug abuse *	49	69	20
PAP test awareness (cervical cancer) *	56	72	16
Diet improvement *	55	70	15
Breast self examination	53	65	12
Increasing physical activity	58	66	8
Skin cancer prevention	67	73	6
Smoking cessation	68	72	4

** Statistically significant difference between present and needed level, $p < 0.01$*

Table 5b. Present and needed level of understanding, skill and experience to provide counseling among community pharmacists.

Area	Mean level (on a scale of 0 to 100)		Difference
	Present level	Needed level	
Dealing with patient/family anger *	36	77	41
Colorectal cancer screening *	34	74	40
Dealing with patient/family grief *	41	79	38
PSA test awareness (prostate cancer) *	46	77	31
Interpreting information the patient received from other health professionals such as the physician *	57	84	27
Dealing with your own grief/stress *	55	79	24
Alcohol or drug abuse *	54	77	23
Breast self examination *	54	76	22
Diet improvement *	63	80	17
PAP test awareness (cervical cancer) *	64	75	11
Skin cancer prevention *	77	83	6
Increasing physical activity *	70	76	6
Smoking cessation	82	83	1

* *Statistically significant difference between present and needed level, $p < 0.01$.*

Hospital and community pharmacists rated many factors as barriers to improving the care of cancer patients in their practice. Community and hospital pharmacists rated six of the fifteen barriers differently and are thus presented in different tables (Tables 6a and 6b). The highest rated barriers for hospital pharmacists were lack of staff; lack of time; and costs of prescription medications. The highest rated barriers for community pharmacists were lack of Continuing Pharmacy Education programs in cancer care; costs of prescription medications; and lack of communication with the specialist physician about patients. The ratings of other barriers are shown in the table. There was one difference by community size and by district: lack of communication with the cancer centre was rated a more significant barrier in communities less than 50,000 in size and outside Capital Health.

Table 6a. Barriers to improving the care of cancer patients in the practice of hospital pharmacists.		
Barrier	**Mean rating of barrier (on a scale of 0 to 100)**	**% "not applicable"**
Lack of staff	83	14%
Lack of time	77	10%
Costs of prescription medications	75	14%
Lack of Continuing Pharmacy Education programs in cancer care	67	8%
Lack of reimbursement for providing health promotion or lifestyle counseling to patients	64	28%
Inconsistent patient education materials being used by different providers	58	18%
Lack of communication with the specialist physician about my patients	54	12%
Lack of communication with the family physician about my patients	54	18%
Public not aware of need for prevention and screening	53	22%
Inadequate community resources, e.g. home care, VON	51	12%
Lack of patient education materials	49	8%
Not confident in my ability to provide counseling	49	12%
Lack of communication with cancer centre	48	12%
Inadequate space or location for counseling	48	18%
Lack of communication with hospital pharmacy	36	41%

Table 6b. Barriers to improving the care of cancer patients in the practice of community pharmacists.		
Barrier	**Mean rating of barrier (on a scale of 0 to 100)**	**% "not applicable"**
Lack of Continuing Pharmacy Education programs in cancer care	74	0%
Costs of prescription medications	73	2%
Lack of communication with the specialist physician about my patients	71	4%
Lack of communication with cancer centre	67	5%
Lack of patient education materials	64	0%
Lack of reimbursement for providing health promotion or lifestyle counseling to patients	63	2%
Lack of time	62	3%
Public not aware of need for prevention and screening	60	1%
Lack of staff	58	1%
Lack of communication with the family physician about my patients	56	4%
Lack of communication with hospital pharmacy	55	6%
Not confident in my ability to provide counseling	51	1%
Inadequate space or location for counseling	48	2%
Inadequate community resources, e.g. home care, VON	48	11%
Inconsistent patient education materials being used by different providers	48	13%

A majority of pharmacists rated pain management; symptom management; chemotherapy; hormone therapy; supportive and palliative care; and pharmaceutical care as "very important" general topics for CPE (Table 7). Other lower rated topics are listed in the table. Community pharmacists more often rated hormone therapy, and diet and cancer as "very important" topics compared to hospital pharmacists. Conversely, the safe handling of cytotoxics was more often rated as "very important" by hospital pharmacists than by community pharmacists. There were no differences between Capital Health and other district but there was one difference by community size: Drug administration was more often rated as a "very important" topic in communities less than 5,000 in size.

Table 7. Most important general topics for Continuing Pharmacy Education (CPE).

General topic	% who rated it "very important"		
	Hospital pharmacists	Community pharmacists	All pharmacists
Pain management	83%	93%	91%
Symptom management	80%	90%	88%
Chemotherapy	73%	70%	70%
Hormone therapy *	38%	63%	58%
Supportive and palliative care	56%	56%	56%
Pharmaceutical care	56%	51%	51%
Drug Administration #	38%	50%	48%
Diet and cancer *	27%	53%	48%
Patho-physiology of cancer	41%	45%	44%
Alternative and complementary therapies	35%	44%	42%
Safe handling of cytotoxics * ##	48%	24%	28%

** Statistically significant difference between hospital and community pharmacists, $p < 0.01$.*

 # Rated "not applicable" by 8% of hospital pharmacists.
Rated "not applicable" by 13% of community pharmacists.
No other support was rated as "not applicable" by more than 5% of all pharmacists.

Note: Pharmacists working in academic, administrative and other settings are included in the totals only for the above table.

Pharmacists were asked to provide two specific topics of interest under each of their five top general areas. The most frequently listed specific topics on an open-ended question (coded according to theme and presented in descending frequency) are included below for curriculum planning purposes (Table 8). Note: Themes mentioned less than 10 times were combined into an "other" category.

Table 8. Specific topics of interest for CPE.

General topic	Specific topic (open-ended question)	# of pharmacists
Pain management	Types of drugs/best drugs	73
	Dosage/drug regimens	40
	Side effects of drugs	33
	Alternative pain management	30
	Current/new guidelines/drugs	27
	Other	84
Symptom management	Nausea/vomiting	85
	Fatigue	24
	Other gastrointestinal symptoms	19
	Drug/treatment side effects	17
	Pain	10
	Oral symptoms	10
	Other	74
Chemotherapy	Side effects/symptom management	108
	Treatment regimens/protocols/dosing	54
	New/current drugs/regimens	40
	Chemotherapy for specific cancer sites	34
	Types of chemotherapy/drugs used	29
	Overview/basic information	15
	Drug interactions	11
	Other	55
Hormone therapy	Treatments/drugs	54
	Specific types of cancer	38
	Side effects	36
	Risk/benefit/outcomes	21
	New/current treatments and drugs	19
	Other	49
Supportive and palliative care	Available services/resources	47
	Supporting/counseling patients/family	25
	Symptom management/medications	23
	Other	44

Table 8. Specific topics of interest for CPE. (Continued)

General topic	Specific topic (open-ended question)	# of pharmacists
Pharmaceutical care	Treatments - various aspects	21
	Side effects/drug-related problems	19
	Seamless care	11
	Pharmacist's role/goals	11
	Other	54
Drug Administration	Routes of administration	36
	Drug regimens/protocols/dosing	33
	Other	52
Diet and cancer	Prevention	34
	Diet for cancer patients	27
	Nutritional supplements/vitamins/etc.	18
	Other	64
Pathophysiology of cancer	Specific types of cancer	34
	Prognosis/outcomes	13
	Overview/general information	13
	Diseases states/stages/progression	11
	Other	69
Alternative and complementary therapies	Evidence/effectiveness	52
	Herbal products	37
	Other types of alternative therapies	31
	Types/what's available/general info	23
	Interactions/side effects	20
	Other	59
Safe handling of cytotoxics	Safety	23
	Handling/preparation/storage	21
	Standards/guidelines	14
	Disposal	12
	Information/guidelines for patient	11
	Other	18

Finally, pharmacists were asked to provide any other comments in an open-ended question. Comments, in descending order of frequency, were as follows:

- Pharmacists wrote about the need for coordinated and seamless care between pharmacists, other health professions and hospitals. For example, community pharmacists would like hospitals to call them when patients are discharged to ensure medications are in stock (10 pharmacists).

- They expressed thanks for *CCNS* having done the survey/assessed pharmacists CPE needs (9).
- Pharmacists expressed an eagerness to learn more about cancer and to improve their care for patients with cancer (9).
- Some pharmacists noted that they saw few cancer patients (8).
- Concern was expressed over the lack of time or staff and the heavy workload interfering with their continuing education (7).
- The survey made them realize how little they knew and that any CPE for pharmacists would be greatly appreciated (6).
- It was noted by some pharmacists that they only saw patients after treatments were provided (5).
- They also expressed the need for more CPE for pharmacists outside large centres and in community pharmacies (5).

Numerous other comments were provided by four or less pharmacists.

3.4 Standards of Care

Pharmacists were asked to self-rate their present and needed level of knowledge and skill to perform effectively as a pharmacist. Hospital pharmacists self-rated their level of knowledge and skills higher on nine of the twenty-three areas than did community pharmacists and are thus presented in different tables (Tables 9a and 9b). Their mean present level of knowledge and skills was rated highest by hospital pharmacists for routes of administration of common systemic treatment agents; calculation of chemotherapy doses, including body surface area determination; procedures for safe handling of cytotoxic agents; and procedures for preparation of aseptic drug doses. Their mean present level of knowledge and skills was rated by community pharmacists at less than the midpoint of the scale for all areas listed on the survey. With the exception of procedures for safe handling of cytotoxic agents, and procedures for preparation of aseptic drug doses, hospital pharmacists self-rated their present level of knowledge and skills as being lower than their needed level to perform effectively as a pharmacist. Community pharmacists also rated their present level of knowledge and skills on all areas as being lower than their needed level to perform effectively as a pharmacist. The gap or difference between their present and needed level of knowledge and skills is also shown in the tables. Large gaps exist for most of the areas listed in the Table. Some of the largest knowledge

and skill gaps for both hospital and community pharmacists included: interactions between cancer treatment/supportive care drugs and other drugs/food; use of complementary & alternative medicines; cancer treatment regimens of systemic and combined therapy; goals & techniques for education of patients on their cancer treatment medications; monitoring & management of common adverse effects to cancer treatment; and effect of cancer treatment drugs on the tumor and on the host tissues, including drug toxicities.

There were differences between Capital Health and other districts on one of the twenty-three areas and by community size on two of the twenty-three areas. The present level of knowledge and skills on routes of administration of common systemic treatment agents was lower among pharmacists in communities less than 5,000 in size. The present and needed level of knowledge and skills related to clinical trials in oncology was lower among pharmacists in communities smaller than 50,000 in size. The needed level of knowledge and skills for preparation of aseptic drug doses was rated as being lower outside Capital Health.

Table 9a. Self-rating of present and needed level of knowledge and skill needed to perform effectively as a hospital pharmacist.

Area of knowledge and skill	Mean self-rating (on a scale of 0 to 100)		Difference	% "not applicable" on needed level
	Present Level	Needed level		
Cancer treatment regimens of systemic and combined therapy *	35	80	45	2%
Use of complementary & alternative medicines *	24	68	44	4%
Clinical Trials in Oncology *	22	66	44	6%
Effect of cancer treatment drugs on the tumor and on the host tissues, including drug toxicities *	40	82	42	2%
Interactions between cancer treatment/supportive care drugs and other drugs/food *	41	82	41	2%
Goals & techniques for education of patients on their cancer treatment medications *	36	77	41	4%
Monitoring & management of common adverse effects to cancer treatment *	45	85	40	2%
General therapeutics & treatment goals *	43	82	39	0%
Communication with caregivers in the home, in other institutions and in the community *	36	75	39	6%
Monitoring & management of common symptoms of cancer *	40	78	38	2%
Goals of systemic therapy, including chemotherapy *	42	80	38	2%
Classification & mechanism of action for cytotoxic agents, hormonal agents & other cancer treatment drugs *	41	78	37	0%
Pathophysiology & symptoms of cancer *	39	75	36	6%
Use of specialty devices for drug administration, including infusion pumps *	38	74	36	6%
Goals of interdisciplinary teamwork in provision of care to cancer patients *	42	77	35	2%
Epidemiology of cancer *	38	68	31	4%
Use of supportive care and symptom management treatments *	49	78	30	4%
Goals of supportive and palliative care for cancer patients *	49	75	26	4%
Documentation of systemic treatment orders *	52	75	22	4%
Routes of administration of common systemic treatment agents *	61	77	16	4%
Calculation of chemotherapy doses, including body surface area determination *	63	76	14	4%
Procedures for safe handling of cytotoxic agents	65	77	12	4%
Procedures for preparation of aseptic drug doses	74	77	3	4%

** Statistically significant difference between present and needed level, $p < 0.01$.*

Table 9b. Self-rating of present and needed level of knowledge and skill needed to perform effectively as a community pharmacist.

Area of knowledge and skill	Mean self-rating (on a scale of 0 to 100)		Difference	% "not applicable" on needed level
	Present Level	Needed level		
Interactions between cancer treatment/supportive care drugs and other drugs/food *	35	85	50	0%
Use of complementary & alternative medicines *	24	73	49	0%
Cancer treatment regimens of systemic and combined therapy *	32	81	49	1%
Goals & techniques for education of patients on their cancer treatment medications *	33	80	47	3%
Monitoring & management of common adverse effects to cancer treatment *	44	88	44	0%
Effect of cancer treatment drugs on the tumor and on the host tissues, including drug toxicities *	38	82	44	0%
Monitoring & management of common symptoms of cancer *	38	82	44	1%
Goals of interdisciplinary teamwork in provision of care to cancer patients *	28	73	44	7%
Classification & mechanism of action for cytotoxic agents, hormonal agents & other cancer treatment drugs *	38	80	42	0%
Use of specialty devices for drug administration, including infusion pumps *	23	65	42	10%
Pathophysiology & symptoms of cancer *	37	78	41	2%
Calculation of chemotherapy doses, including body surface area determination *	21	62	41	17%
Communication with caregivers in the home, in other institutions and in the community *	37	77	40	2%
Clinical Trials in Oncology *	15	55	40	16%
General therapeutics & treatment goals *	46	85	39	0%
Goals of systemic therapy, including chemotherapy *	43	81	39	1%
Use of supportive care and symptom management treatments *	38	78	39	1%
Routes of administration of common systemic treatment agents *	36	71	35	11%
Goals of supportive and palliative care for cancer patients *	42	76	34	1%
Epidemiology of cancer *	37	70	34	4%
Documentation of systemic treatment orders *	24	55	31	34%
Procedures for safe handling of cytotoxic agents *	37	67	30	8%
Procedures for preparation of aseptic drug doses *	33	54	21	29%

** Statistically significant difference between present and needed level, $p < 0.01$.*

Pharmacists were also asked about the standards of care outlined in the "Specialty Practice Standards for Oncology" draft document by the Canadian Association of Pharmacist in Oncology (CAPhO). A significantly larger proportion of hospital pharmacists rated themselves as having adequate training and knowledge to achieve Standards 2 and 3 compared to community pharmacists. A significantly higher proportion of community pharmacists rated themselves as routinely achieving Standards 1 and 3 in their practice compared to hospital pharmacists. The results for hospital and community pharmacists are thus presented in different tables (Tables 10a and 10b). Over 70% of hospital pharmacists rated themselves as having adequate training and knowledge to achieve Standards 2, 3 and 4, whereas only 47% of hospital pharmacists did so for Standard 1. Between 65% and 66% of community pharmacists rated themselves as having adequate training and knowledge to achieve Standards 4 and 6, whereas less than half did so for Standards 2 and 5. Between 59% and 74% of hospital pharmacists "always" or "sometimes" achieved most standards in their routine practice with the exceptions of Standard 1 (38%) and Standard 3 (44%). Between 57% and 78% of community pharmacists "always" or "sometimes" achieved most standards in their routine practice with the exceptions of Standard 2 (46%). Standard 2 was for the most part seen as not applicable to community pharmacists. Finally, there were no differences on the standards of care by community size or between Capital Health and other districts.

Table 10a. Training and knowledge to achieve Canadian Association of Pharmacist in Oncology - CAPhO standards and achievement of those standards in routine practice by hospital pharmacists.

Standard	% with adequate training and knowledge to achieve this standard	% who "always" or "sometimes" achieve this standard in routine practice	% "not applicable" re: achieving standard in routine practice
Standard 1: Each patient should receive some pharmaceutical care services, but there may be inadequate resources. A goal is to meet each active treatment patient at least once during the course of treatment.	47%	38%	37%
Standard 2: Each inpatient should be assessed for Drug Related Problems (DRPs), especially if the hospital stay exceeds 2 days.	79%	74%	24%
Standard 3: Ambulatory patients should be assessed for DRPs within the first 4 visits, if possible.	78%	44%	37%
Standard 4: Each patient with 4 or more medications should be assessed for DRPs (excluding those used for cancer treatment) using patient history from primary care nurse or physician.	79%	62%	28%
Standard 5: Each patient with another medical condition which could affect systemic treatment of the cancer should be assessed for DRPs (e.g. cardiac disease, diabetes, liver or kidney dysfunction, arthritic conditions).	61%	59%	28%
Standard 6: Medication histories should include complementary and alternative medicines as well as conventional medications.	67%	59%	24%

Note: Missing data occurred in less than 4% of cases for each Standard.

Table 10b. Training and knowledge to achieve Canadian Association of Pharmacist in Oncology - CAPhO standards and achievement of those standards in routine practice by community pharmacists.

Standard	% with adequate training and knowledge to achieve this standard	% who "sometimes" or "always" achieve this standard in routine practice	% "not applicable" re: achieving standard in routine practice
Standard 1: Each patient should receive some pharmaceutical care services, but there may be inadequate resources. A goal is to meet each active treatment patient at least once during the course of treatment.	59%	78%	18%
Standard 2: Each inpatient should be assessed for Drug Related Problems (DRPs) , especially if the hospital stay exceeds 2 days.	48%	46%	75%
Standard 3: Ambulatory patients should be assessed for DRPs within the first 4 visits, if possible.	53%	68%	39%
Standard 4: Each patient with 4 or more medications should be assessed for DRPs (excluding those used for cancer treatment) using patient history from primary care nurse or physician.	65%	67%	30%
Standard 5: Each patient with another medical condition which could affect systemic treatment of the cancer should be assessed for DRPs (e.g. cardiac disease, diabetes, liver or kidney dysfunction, arthritic conditions).	42%	57%	24%
Standard 6: Medication histories should include complementary and alternative medicines as well as conventional medications.	66%	65%	12%

Note: Missing data occurred in 10% or less of cases for each Standard.

4. Discussion and Recommendations

Key findings from the survey are listed in point form in this section. The discussion of survey results and a planning session with the Pharmacists Advisory Group (see Appendix A) of *CCNS* led to the development of recommendations for the design and implementation of cancer education for pharmacists. These recommendations are listed under each key finding. It should be noted that these recommendations are part of a larger effort by the Education Advisory Group of *CCNS* and their implementation depends upon factors such as availability of finances and human resources, as well as various other constraints.

Key Finding # 1: Educational Needs and Priorities: The top issues for which continuing education are needed were pain management; symptom management; chemotherapy; supportive and palliative care; and pharmaceutical care. Hormone therapy was also rated as a very important need for community pharmacists.

With the exception of hormone therapy, these top issues were consistent among pharmacists in hospital and community settings, in varying districts and in varying community sizes. Some CE modules addressing these topics could be interdisciplinary in nature while some, such as pharmaceutical care, would need to be developed specifically for pharmacists. The Pharmacists Advisory Group (see Appendix A) noted that many certified cancer CPE programs already exist and that there are several existing CE events, symposia, etc. that would likely be open to speakers presenting on these needed cancer CPE topics.

Recommendation:

1. *CCNS* lead the development of a series of continuing education modules on the above topics, building on what's already available in those areas.

Key Finding # 2: Preferred Educational Methods and Settings: **There was no one educational method and setting that would be preferred or accessible to most pharmacists.**

The preferred methods of receiving continuing education included Dalhousie CPE programs, meetings/conferences, person to person, and formal courses. The preferred locations for hospital pharmacists included their place of employment, a regional or community hospital or a tertiary care hospital. The preferred locations for community pharmacists included their home; place of employment or a university setting. Most pharmacists were only willing to travel more than 50 km about once or twice a year. The Pharmacists Advisory Group (see Appendix A) noted that there are pharmacists across the province who may be able to lead the delivery of modules in their area if *CCNS* leads the curriculum development, preparation of materials, and organization of a cancer-related continuing education series.

Recommendations:

2. *CCNS* organize and support the delivery of cancer educational modules through a variety of methods in a variety of settings.
3. *CCNS* ensure that educational opportunities are made accessible to both hospital and community pharmacists in all districts.

Key Finding # 3: Preferred Educational Supports: **The highest rated supports included: having a list of health professionals and agencies to contact about specific issues; a help line to an oncology pharmacist to consult about specific cancer related problems; a checklist and/or instructions for managing patients and continuing care when a patient returns to their practice; and attending education sessions.**

There were strong similarities in needed supports among different disciplines as the preferred supports for pharmacists listed above were also among the highest rated supports for nurses and physicians. The Pharmacists Advisory Group (see Appendix A) noted the difficulty of finding information about all the opportunities that are out there although, generally speaking, there has not been very much cancer-related CPE available in the past five years.

Recommendations:

4. A directory of available educational resources and opportunities and a directory of health professionals and agencies who could be called around specific issues would be a useful and credible undertaking for *CCNS*.

<u>Key Finding # 4: Knowledge and Skills Re: Standards of Care:</u> **There were large gaps between present and needed levels of knowledge and skill to perform effectively as a pharmacist.**

There was a statistically significant difference between present and needed levels of knowledge and skill to perform effectively as a pharmacist in almost all of the 23 areas listed on the survey related to the standards of care. There were a number of differences between hospital and community pharmacists. There were very few differences between pharmacists in Capital Health and in other districts or between pharmacists in different community sizes.

Pharmacists were also asked about the standards of care outlined in the "Specialty Practice Standards for Oncology" draft document by the Canadian Association of Pharmacist in Oncology (CAPhO). Less than 70% of hospital pharmacists rated themselves as having adequate knowledge to achieve three of the six CAPhO standards and less than 70% of community pharmacists had sufficient training and knowledge to achieve any of the six standards. There were no differences between pharmacists in Capital Health and pharmacists in other districts or between pharmacists in different community sizes with regards to knowledge or training to achieve any of the six standards.

The Pharmacists Advisory Group (see Appendix A) noted that self-assessment related to standards of care is a new development and may be difficult to capture with a small number of survey items. They also noted that care should be taken when interpreting results related to the proportion of pharmacists who achieved various standards of care since achieving these standards is related to many other factors such as time, available staff and access to patients, in addition to knowledge and training. Finally, they noted that the ratings of knowledge and skills necessary to achieve the standards could potentially be used as a baseline to assess progress in making cancer-related continuing education accessible to pharmacists.

Recommendation:

5. *CCNS* make the final report available to all persons involved in curriculum development so that full use can be made of the detailed responses regarding knowledge and skills related to each standard of care.

Key Finding # 5: Basis for Design and Implementation of Continuing Education: Many factors contribute to the decision to participate in continuing education although time, scheduled program times, work demands and program relevance appear to be the most important ones.

Although it would not be easy to influence available time and work demands on pharmacists, scheduling of programs and program relevance could be improved by using the results of this survey and by seeking the continued input of pharmacists and pharmacists' organizations in the design of cancer-related continuing education. The Pharmacist Advisory Group noted that program relevance may be related to the lack of case study modules compared to more traditional and less interactive sessions that present textbook lists of drugs of choice, dosages, etc. Sessions that focus on cases that arise when drugs of choice do not work may be more relevant to pharmacist's practice.

Recommendations:

6. *CCNS* ensure that the CE modules are practical and relevant. Some modules might be case-study based whiie others might be delivered in a more traditional format.
7. *CCNS* work with various stakeholders, such as the Dalhousie University - Division of Continuing Pharmacy Education, The Pharmacy Association of Nova Scotia and The Nova Scotia College of Pharmacists, to provide advance scheduling of cancer-related CPE events. It is important to work with these stakeholders to avoid scheduling conflicts with other continuing education events and to coordinate the delivery of a consistent set of educational modules.
8. *CCNS* establish a Pharmacist Education Sub-Committee with representation from across the province, under the *CCNS* Education Advisory Group, to review these results and to make recommendations for implementation.
9. *CCNS* support evaluation of new cancer education modules and delivery methods.

APPENDIX A: Pharmacists Needs Assessment Advisory Group

MEMBER'S NAME	FACILITY	JOB TITLE
Deb Barnhill, BScPharm	Dalhousie University	Coordinator, Continuing Pharmacy Education
Larry Broadfield, BScPharm, MHSc, FCSHP	*Cancer Care Nova Scotia*	Manager, Systemic Therapy Program
John McNeil, BScPharm	Cochrane's Pharmasave	Pharmacist Owner
Anne Murray, BSc, MAEd	*Cancer Care Nova Scotia*	Education Coordinator
Bill Skinner, BScPharm	Lawtons Drugs	Manager
Jill Skinner, BScPharm	Colchester Regional Hospital	Director of Pharmacy
Sharon Sobol, BScPharm	Cape Breton District Health Authority	Interm Director of Pharmacy Services
Lilla Tanner, BScPharm	QEII Health Science Centre	Staff Pharmacist

Cancer Care
Nova Scotia

1278 Tower Road
5th floor Bethune Building
Halifax, NS B3H 2Y9
Phone: 902-473-4645
Toll free: 1-866-599-2267
Fax: 902-473-4631
Email: info@ccns.nshealth.ca
www.cancercare.ns.ca

Furthering Cancer Education in Nova Scotia:

Pharmacists Needs Assessment

Executive Summary

November 2002

Cancer Care Nova Scotia

Executive Summary

This needs assessment was undertaken by *Cancer Care Nova Scotia (CCNS)* to assist in meeting its mandate to facilitate cancer care education for pharmacists. The purpose of this needs assessment was to obtain the best information possible to assist in planning education programs for pharmacists working with individuals and families living with and at risk for cancer. The questionnaire was designed with the assistance of the Pharmacists Advisory Group of *CCNS* and was based in part, on the *CCNS* physicians and nurses needs assessment questionnaires, as well as draft Pharmacist Standards of Care. All pharmacists from the list provided by the Nova Scotia Pharmaceutical Society were mailed questionnaires in April 2002 followed by a reminder postcard and a later reminder letter.

The overall response rate was 45%, ranging from 25% to 57% per district after wrong addresses were excluded. The response rate from Capital Health and from all other districts were nearly identical. The responses included 301 completed surveys (36% of the sample) and 69 pharmacists who returned the voucher indicating they did not provide care for cancer patients or their families (8% of the sample). In total, 51 of the 126 hospital pharmacists listed on the database completed the survey (40%) and 239 of 713 community pharmacists completed the survey (34%). Responses were representative of varying community sizes. Thirty-six percent worked in a community greater than 50,000 residents in size; 9% in a community between 25,000 and 50,000 in size; 34% in a community between 5,000 and 25,000 in size; and 21% in a community smaller than 5,000 in size.

Pharmacists were asked about important general topics for Continuing Pharmacy Education (CPE). The top issues for which continuing education are needed included: pain management; symptom management; chemotherapy; supportive and palliative care; and pharmaceutical care. Hormone therapy was also rated as a very important need for community pharmacists. With the exception of hormone therapy, these top issues were consistent among pharmacists in hospital and community settings, in varying districts and in varying community sizes.

There was no one educational method and setting that would be preferred or accessible to most pharmacists. The preferred methods of receiving continuing education were consistent between hospital and community pharmacists and included Dalhousie CPE programs, meeting /conferences, person to person, and formal courses. There were some differences between hospital and community pharmacists in lower rated methods. Hospital pharmacists were more likely to prefer interactive practice based workshops, interactive video conference CPE programs, and teleconferences than community pharmacists. The preferred locations for hospital pharmacists included their place of employment, a regional or community hospital or a tertiary care hospital. The preferred locations for community pharmacists included their home; place of employment or a university setting.

Pharmacists were also asked about the preferred times and seasons to attend continuing education, as well as their willingness to travel to receive continuing education. Almost all pharmacists were able to attend continuing education during personal time. Most hospital pharmacists were also able to attend continuing education during work time. This was not true for most community pharmacists. The best time of the week for most pharmacists was weekdays during the evening. Other times were much less preferred although many hospital pharmacists also preferred weekdays during the day. The best seasons to attend continuing education were fall, spring and winter, in that order. Most pharmacists were only willing to travel more than 50 km about once or twice a year.

The highest rated supports included: having a list of health professionals and agencies to contact about specific issues; a help line to an oncology pharmacist to consult about specific cancer related problems; a checklist and/or instructions for managing patients and continuing care when a patient returns to their practice; attending

educational sessions and current pharmacy and medical texts/journals. Many hospital pharmacists also rated workplace support (i.e. management promoting continuing education for staff) and Clinical Practice Guidelines as "very important" supports.

Hospital and community pharmacists rated many factors as barriers to improving the care of cancer patients in their practice. The highest rated barriers for hospital pharmacists were lack of staff; lack of time; and costs of prescription medications. The highest rated barriers for community pharmacists were lack of Continuing Pharmacy Education programs in cancer care; costs of prescription medications; and lack of communication with the specialist physician about patients.

There were large gaps between present and needed levels of knowledge and skill to perform effectively as a pharmacist. There was a statistically significant difference between present and needed levels of knowledge and skill to perform effectively as a pharmacist in almost all of the 23 areas listed on the survey related to the standards of care. There were a number of differences between hospital and community pharmacists.

Pharmacists were also asked about the standards of care outlined in the "Specialty Practice Standards for Oncology" draft document by the Canadian Association of Pharmacists in Oncology - CAPhO. Less than 70% of hospital pharmacists rated themselves as having adequate knowledge to achieve three of the six CAPhO standards and less than 70% of community pharmacists had sufficient training and knowledge to achieve any of the six standards.

Many factors contribute to the decision to participate in continuing education although time, scheduled program times, work demands and program relevance appear to be the most important ones. Other important factors included location of educational opportunity, personal interest, approval for Continuing Education Units, and family demands.

As noted above, there were many differences between community and hospital pharmacists in various areas assessed on the questionnaire. There were also some differences by districts and by community size in terms of educational resources, methods and settings. However, there were very few differences in terms of educational needs and priorities, needed supports or knowledge and skills related to standards of care.

The discussion of survey results and a planning session with the Pharmacists Advisory Group of *CCNS* led to the development of recommendations for the design and implementation of cancer education for pharmacists. It should be noted that these recommendations are part of a larger effort by the Education Advisory Group of *CCNS* and their implementation depends upon factors such as availability of finances and human resources, as well as various other constraints. The recommendations are as follows:

1. *CCNS* lead the development of a series of continuing educational modules on the following topics: pain management, symptom management, chemotherapy, supportive and palliative care, and pharmaceutical care; building on what's already available in those areas. Hormone therapy was also rated as a very important need for community pharmacists.

2. *CCNS* organize and support the delivery of cancer educational modules through a variety of methods in a variety of settings.

3. *CCNS* ensure that educational opportunities are made accessible to both hospital and community pharmacists in all districts.

4. A directory of available educational resources and opportunities and a directory of health professionals and agencies who could be called around specific issues would be a useful and credible undertaking for *CCNS*.

5. *CCNS* make the final report available to all persons involved in curriculum development so

that full use can be made of the detailed responses regarding knowledge and skills related to each standard of care.

6. *CCNS* ensure that the Continuing Education modules are practical and relevant. Some modules might be case-study based while others might be delivered in a more traditional format.

7. *CCNS* work with various stakeholders, such as the Dalhousie University - Division of Continuing Pharmacy Education, The Pharmacy Association of Nova Scotia and The Nova Scotia College of Pharmacists to provide advance scheduling of cancer-related CPE events. It is important to work with these stakeholders to avoid scheduling conflicts with other continuing education events and to coordinate the delivery of a consistent set of educational modules.

8. *CCNS* establish a Pharmacists Education Sub-Committee with representation from across the province, under the *CCNS* Education Advisory Group, to review these results and to make recommendations for implementation.

9. *CCNS* support evaluation of new cancer education modules and delivery methods.

If you wish to receive the *Furthering Cancer Education in Nova Scotia: Pharmacists' Needs Assessment, Final Report*, please contact:

Anne Murray
Education Coordinator
Cancer Care Nova Scotia
Telephone: (902) 473-3781
Fax: (902) 473-4631
Email: anne.murray@ccns.nshealth.ca